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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,771	01/28/2005	Toyoki Fujihara	MAM-058	1751
20374 7590 10/26/2009 KUBOVCIK & KUBOVCIK SUITE 1105 1215 SOUTH CLARK STREET ARLINGTON, VA 22202				
EXAMINER				
LEE, CYNTHIA K				
ART UNIT		PAPER NUMBER		
1795				
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10/26/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/522,771

Applicant(s)

FUJIHARA ET AL.

Examiner

CYNTHIA LEE

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-9, 12, 14-21 and 24-29 is/are pending in the application.
- 4a) Of the above claim(s) 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-9, 14-21 and 24-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/6/2009 has been entered.

Response to Amendment

This Office Action is responsive to the amendment filed on 8/6/2009. Claims 1, 3-9, 12, 14-21, and 24-29 are pending. Claim 12 is withdrawn from further consideration as being drawn to a non-elected invention. Applicant's arguments have been considered, but are not persuasive. Claims 1, 3-9, 14-21, and 24-29 are non-finally rejected for reasons stated herein below.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3-9, 14-21, 24-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The limitation "raw materials" is unclear. It is unclear as to what part of the process the "raw materials" refers to.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-9, 14-21, 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuhara (JP 2002-100357) in view of Nishida (EP 1246279).

Kazuhara discloses a lithium ion battery comprising a material that stores and releases lithium ion [0024] and positive active material comprising a lithium-nickel-manganese complex having a R-3m rhombohedral structure expressed by $\text{Li}_x\text{Ni}_y\text{Mn}_{1-y-z}\text{MnO}_2$ and a lithium-cobalt complex having a R-3m rhombohedral structure expressed by Li_xCoO_2 . See Abstract. The lithium-nickel-manganese complex consists of a rhombohedron stratified (Applicant's layered structure) rock salt type structure [0017].

In particular, the formula $\text{LiNi}_{0.5}\text{Mn}_{0.5}\text{O}_2$ is disclosed [0027] (Applicant's claims 6, 7, 14-17).

The mean particle diameter is 4 micrometers [0027] (Applicant's claims 8, 18 and 19).

The lithium cobaltate has a mean particle diameter of 7 micrometers [0027] (Applicant's claims 9, 20 and 21).

The lithium-nickel-manganese complex was mixed with lithium cobaltate. The mixture was mixed with polyvinylidene fluoride (binder) [0010].

Kazuhara discloses that a flat cell, a wound type cylindrical cell, and button cell, etc are formed [0026]. Absent specific degree of deformation of the outer casing, the Examiner notes that all materials possess some form of deformation and thus, the battery of Kazuhara deforms with an internal pressure of the battery.

Kazuhara discloses a lithium metal complex oxide, but does not disclose having fluorine (Applicant's claims 1, 4, 5). Nishida teaches of applying fluorination treatment to a lithium transition metal oxide composite. Nishida teaches of fluorinating lithium carbonate and tricobalt tetraoxide (Applicant's raw materials) by baking the mixture in air at 980C [0021]. LiF is used as the fluorine compound (Applicant's claims 24, 26, and 28). Yamaura teaches that by fluorinating the lithium transition metal complex, a high temperature cycle property can be enhanced. See Abstract and [0011]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to fluorinate the positive active material of Kazuhara for the benefit of enhancing the cycle property of the battery.

It has been held that "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from the product of prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113.

Regarding claims 25, 27, and 29, Nishida teaches that the fluorination process stabilizes the synthesis so that the decomposed gas of the electrolyte is decreased[0011], thus clearly teaching that the fluorine compound is a result effective variable. It has been held by the courts that discovering an optimum value or workable ranges of a result-effective variable involves only routine skill in the art, and thus not novel. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). See MPEP 2144.05. Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). MPEP 2144.05

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuhara (JP 2002-100357) in view of Nishida (EP 1246279) as applied to claim 1, further in view of Goto (US 6444351).

Kazuhara modified by Nishida teaches all the elements of claim 1 and are incorporated herein. Kazuhara modified by Nishida does not teach an aluminum outer casing with a thickness of 0.5 mm (or 500 um) or below. Goto teaches of a wound battery casing with a laminated nylon and aluminum layer having a thickness of 40 um (9:63-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the battery of Kazuhara modified by Nishida with the

casing as taught by Goto for the benefit of protecting the inside components of the battery. Further, it has been held by the court that the selection of a known material based on its suitability for its intended use is *prima facie* obvious. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07.

Response to Arguments

Arguments filed 8/6/2009 will be addressed:

Applicant's evidence showing that the fluorine exists inside the complex oxide in the journal, G.H. Kim, *Journal of the Electrochemical Society*, 152, (9), A1707-A1713 (2005) has been found persuasive. Applicant's arguments with respect to the rejection Kazuhara in view of Yamaura have been considered but are moot because the rejection has been withdrawn.

Applicant argues that since Nishida teaches only halogenation of lithium containing cobalt complex oxide, not lithium-nickel-manganese complex oxide, the combination would result in the halogenation of lithium cobalt complex oxide, and not the halogenation of lithium-nickel-manganese complex oxide.

The Examiner respectfully disagrees. It is noted that since Nishida teaches of halogenating the entire lithium transition metal oxide, the halogenation of Kazuhara's mixture of transition metal oxide would also yield in its entirety and not just in partiality.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Lee whose telephone number is 571-272-8699. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cynthia Lee/
Examiner, Art Unit 1795